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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,684	03/15/2001	Dieter Schulz	50626.19	5285

7590 06/22/2004

Joseph R. Keating, Esq.  
KEATING & BENNETT, LLP  
Suite 312  
10400 Eaton Place  
Fairfax, VA 22030

EXAMINER
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JAMAL, ALEXANDER

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/808,684

Applicant(s)

SCHULZ, DIETER

Examiner

Alexander Jamal

Art Unit

2643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 and 8-10 is/are allowed.
- 6) ☒ Claim(s) 5-7 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. Based upon the amendment filed June 4, 2004, examiner withdraws objections to the specification (priority) and the objection to **claim 8**.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claim 5,7** rejected under 35 U.S.C. 102(e) as being anticipated by Xie et al. (5644634).

As per **claim 5**, Xie discloses a multi-frequency tone detector comprising an analysis filter 124 (Fig. 2) for detecting tone energies at multiple frequencies (Col 7 line 1-16). Xie further discloses a decision logic block to detect tone frequencies based upon the detected energy (Col 7 lines 32-45). By allowing different window sizes for each bin, the window size is chosen to be the most accurate for each bin (Col 9 lines 5-36), and each window is centered on the desired frequency (Col 11 lines 25-50). As such, each window size would be chosen so that the adjacent ones of said tone frequencies of interest are located at the spectral nulls of the filter.

As per **claim 7**, Xie's analysis filter is a digital filter (Col 3 lines 25-31).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 6** rejected under 35 U.S.C. 103(a) as being unpatentable over Xie et al. (5644634) as applied to claim 5 above, and further in view of Felder et al. (6370244).

As per **claim 6**, Xie discloses applicant's claim 5, however Xie does not mention using a rectangular window for the analysis filter.

Felder teaches a DTMF detector implementing an analysis filter with a rectangular window with variable window size to detect energy in each frequency bin (Col 7 line 66 to Col 8 line 17). It would have been obvious to one of ordinary skill in the art at the time of this application to use a rectangular window in the analysis filter for the purpose of reducing the complexity of the system (Col 8 lines 11-14) while maintaining it's functionality.

As per **claim 11**, Xie's analysis filter is a digital filter (Col 3 lines 25-31).

***Response to Arguments***

5. Applicant's arguments filed June 4, 2004 have been fully considered but they are not persuasive.

As per the argument of Xie disclosing the analysis filter with a window size chosen such that the spectral nulls of the filter are located at the frequencies adjacent to the frequency being detected in **claim 5**, the examiner contends that the Xie reference does disclose that the spectral nulls of the filter are located at the frequencies adjacent to the frequency being detected. Xie discloses adjusting the frame size (N) so as to allow the frequency bins to be located directly at the detected frequency, as opposed to a single set frame size that does not allow the frequencies to be aligned in the bins (Col 9 lines 10-20). The purpose of Xie using variable frame lengths is to allow the frequency bins to align with the detected frequency in order to minimize the amount of leakage. This format entails the analysis filter searching a different sized frequency bin (that would be defined by the spectral nulls of the analysis filter) for each tone being detected (Col 8 line 19 to Col 9 line 36). As such the above rejection of claims 5-7,11 stands.

***Allowable Subject Matter***

6. **Claims 1-4,8-10** are allowed over the prior art of record


**Conclusion:**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 703-305-3433. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 703-305-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9315 for After Final communications.

  
CURTIS KUNTZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600